General Plan Review Requirements
Residential

Note: The approved plans and permit/inspection card shall be on the job site at the time of all inspections.

General: These requirements do not imply approval of any construction, which does not comply with the International Residential Code. This is a partial list of common code items.

Footing:

- Assumed soil bearing pressure is 1500 (Table R401.4.1)
- Frost protection is 12 inches for footings. (Section R403)
- Spread footings shall be at least 6 inches and footing projections shall be at least 2" and shall not exceed the thickness of the footing. (R403.1.1)
- Footing sizes shall be minimum width and depth per R403 and Table 403.1.1:
  1-story 12" wide x 6" thick
  2-story 15" wide x 6" thick
  3-story 23" wide x 8 1/2" thick

Foundation:

- Stem wall within **Seismic Design Category D_1** shall comply with the following:
  1. Minimum reinforcement shall consist of one #4 horizontal bar located in the upper 12 inches of the wall
  2. Height of unbalanced backfill shall not exceed 4 feet
  3. Foundation walls supporting more than 4 feet of unbalanced backfill shall be constructed in accordance with Table R404.1.1 (2), R404.1.1 (3) or R404.1.1 (4) and shall have two # 4 horizontal bars located in the upper 12 inches of the wall. (Section 404)
- Seismic reinforcing in Design Category D_1 where a construction joint is created between the footing and stem wall shall be provided one #4 vertically four feet on-center extending 14" into stem wall and within 3" of bottom of footing. (Section R403.1.3)
- Anchor bolts shall be ½ x 10" maximum 6 ft. on-center and within 12 inches from the end of plates and a minimum of 2 bolts per plate. Washers shall be 3x3x1/4. Interior bearing walls shall be anchored to a footing. (Section R403)
- Foundation ventilation shall be 1 square foot of vent per 150 square feet of under floor area. (Section R408 & WSEC Section 502.1.2)
- Provisions shall be made for the control and drainage of surface water away from the building. The grade shall slope a minimum of 6-inches in 10 feet away from the building.
- Drains shall be provided all around foundations that retain earth and enclose habitable or usable spaces located below grade. (R405.1)
- Crawl spaces shall be provided with subsoil drains (low point) (UPC Section 1101.5)
- Provide ground cover of 6-mil black polyethylene or equivalent in crawl space. (Energy Code Section 502.1.6.7)

Floors:

- Wood in contact with concrete shall be pressure treated. (Section R319.1)
- Minimum clearance of 12 inches under beams, 18 inches under joists, required in crawl space. (Section R319.1)
- Joists, beams, or girders shall bear 1.5 inches on wood and 3 inches on masonry or concrete (R502.6)
- Decks shall be positively anchored to structures with lags. (Section R502.2.1)
- Joists shall be laterally supported at intermediate bearing. (Section R502.7)

- Joists permitted to be notched to width of D/3 max x D/6 on end thirds only; joist end cuts permitted to depth of D/4 max.; and borings permitted D/3 within 2 inches to edges. (Section R502.8) (*See attach detail*)
- Joists, beams or girders entering into concrete shall be P.T. or provided with a moisture barrier between the beam and a half-inch air space around ends, sides, and tops. (R319.1)
- Crawl access shall be provided at a minimum of 18 inches x 24 inches. (Section R408.3)

Walls:

- Wood framing subject to water splash shall be protected by approved methods (elevated 1 inch above concrete or 6 inches above grade) or approved materials (P.T. wood or natural decay resistant wood). (Section R319.1 & R319.1.2)
- Interior load bearing walls shall be framed as exterior walls. (Section R602.4)
- Bearing wall stud permitted to be bored 40% max. of stud depth, unless doubled, then not more than 2 successive studs shall be bored; studs permitted to be notched 25% max. of stud depth and there shall not be bored in same cross section. (Section R602.6) *(See attached detail*)
- Non-bearing wall studs permitted to be bored 60% max. of stud depth, unless doubled, then not more than 2 successive studs shall be bored; studs permitted to be notched 40% max. of stud depth and there shall not be boring in same cross section. (Section R602.6) (*See attached detail*)
- Top plates permitted to be notched 50% max, then shall be strapped with a 1 ½" steel strap (16ga) with (8) 16d's each side of notch. (Section R602.6.1)
- All exterior walls within Seismic Design Category D_1 shall be braced 25 feet on-center with interior brace panels at 35 feet on-center. (Section R602.10)
- Wall studs laterally unsupported (without a floor diaphragm) shall be a maximum of ten feet. (Section R602.3)
- Fire blocking shall be provided to cut off all concealed draft openings and to form an effective fire barrier between stories and between a top story and the roof space.
  1. Vertically at the ceiling and floor level s and horizontally at intervals not exceeding 10 feet.
  2. At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings and cove ceilings.
  3. At openings around vents, pipes, and ducts at ceiling and floor level, with an approved material to resist the free passage of flame and products of combustion.

  See Section R602.8 for additional requirements.

Roof Framing:

- Rafters shall be provided full bearing on the ridge board the depth of the cut rafter. (Section R802.3)
- Rafters permitted to be notched to width of D/3 max x D/6 on end thirds only; rafter end cuts permitted to depth of D/4 max.; and borings permitted D/3 within 2 inches to edges. (Section R802.7) (*See attached detail*)
- Hips and valley rafters shall be supported at the ridge by a brace to a bearing partition or designed to carry the specified loads. (Section R802.3)
- Rafters and ceiling joist exceeding a ratio of 5:1 (2x10) shall be laterally supported (blocked) at bearing points. (Section R802.8)
- Rafters and truss shall be provided with approved connectors to resist uplift. (Section R802.10.5)
- A continuous load path shall be provided to transmit the uplift forces from the rafter or truss ties to the foundation. (Section R802.11.1)

Roofs

- Composition roof shingles must be a minimum of 25-year life shingles manufactured to ASTM 3462 and installed per the manufacturer's installation specifications.

- Attic ventilation must be 1/150th of the attic area or 1/300th of attic area if at least 50 percent but not more than 80 percent of the required ventilation is 3 feet above the eave or cornice vents or provide a moisture barrier on the warm side of the ceiling. (R806.2)
- Provide a readily accessible attic opening to all areas with 30 square feet or more and has 30 inches or more of vertical height. The rough framed opening shall be not less than 22 by 30 inches with a minimum of 30 inch of headroom provided at some point above the opening. (R807)

Light/Ventilation:

- Natural light shall be provided to the habitable spaces not less than 8% of which ½ shall be operable for ventilation. (Section R303)
- Mechanical provisions may be provided to substitute the natural ventilation requirements.
- Artificial light can be substituted for glazed area provided it is capable of producing an average illumination of 6 foot candles over the area of the room at a height of 30" above the floor level. (R303)
- Provide mechanical ventilation in bathroom, and laundry rooms (50 cfm at .25 WG) and kitchens (100 cfm at .25 WG.) See the Washington State Indoor Air Quality Code.
- Outside air is required to be supplied to each habitable room, at a min. of 15 cfm for each area. (WAC51-13 302.6.2).
- Whole house ventilation system required per WAC51-13 section 302.5 and Table 3-2 with a sone rating of 1.5 (302.4) or integrated force-air ventilation system option per WAC 51-13 (303.1.2).

Dryer Venting:

- Maximum length of a vent shall be 25 feet and reduced 2.5 feet for each 45^0 fittings and 5 feet for each 90^0 fittings. (Section M1501.3)

Emergency Egress:

- Emergency egress shall be provided from basements and sleeping rooms. The minimum net clear opening shall be 5.7sq.ft. and the sill shall be not more than 44 inches above the finished floor. (Section R310)
- Emergency egress below grade shall be provided with window well. (Section R310.2)

Smoke Alarms:

- Smoke alarms shall be installed within each sleeping area; outside in the immediate vicinity of the sleeping rooms; and on each story. (Section R313)
- Smoke alarms shall be provided with electrical power and be interconnected and be provided with battery back-up. (Section R313.2)
- When interior alterations, addition, or repairs require a permit, smoke alarms shall be installed as for new dwellings and were there is an attic, crawl, or basement, which provides access to existing alarms, they shall be hard wired and interconnected. (Section R313.1.1)

Safety Glazing:

- Safety glazing shall be required in hazardous locations (refer to list of hazardous location). (Section R308.4)
  1. Glazing in swinging doors
  2. Glazing in fixed and sliding panels of sliding door assemblies and panels in sliding and bi-fold closet door assemblies.
  3. Glazing in storm doors.
  4. .Glazing in all unframed swinging doors.
  5. Glazing in doors and enclosures for hot tubs, whirlpools, saunas, steam rooms, bathtubs and showers. Glazing in any part of a building wall enclosing these compartments where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) measured vertically above any standing or walking surface.
  6. Glazing, in an individual fixed or operable panel adjacent to a door where the nearest vertical

edge is within a 24-inch (610mm)arc of the door in a closed position and whose bottom edge is less than 60 inches above the floor or walking surface.

7. Glazing in an individual fixed or operable panel, other than those locations described in Items 5 and 6 above, that meets all of the following conditions:
    7.1. Exposed area of an individual pane greater than 9 square feet
    7.2. Bottom edge less than 18 inches above the floor.
    7.3. Top edge greater than 36 inches above the floor.
    7.4. One or more walking surfaces within 36 inches horizontally of the glazing.
8. All glazing in railings regardless of an area or height above a walking surface. Included are structural baluster panels and nonstructural in-fill panels.
9. Glazing in walls and fences enclosing indoor and outdoor swimming pools, hot tubs and spas bottom edge of the glazing is less than 60 inches above a walking where the surface and within 60 inches horizontally of the water's edge. This shall apply to single glazing and all panes in multiple glazing.
10. Glazing adjacent to stairways, landings and ramps within 36 inches horizontally of a walking surface when the exposed surface of the glass is less than 60 inches above the plane of the adjacent walking surface.
11. Glazing adjacent to stairways within 60 inches horizontally of the bottom tread of a stairway in any direction when the exposed surface of the glass is less than 60 inches (1524 mm) above the nose of the tread.

Stairways:

- Minimum stair width shall be 36 inches.(Section R311.5)
- Headroom shall be 6 feet 8 inches minimum. (Section R311.5.2)

- Risers shall not exceed 7 3/4 inches and the run shall not be less than 10 inches. Treads shall be a minimum of 10". (Section R311.5.3)
- The riser height or tread depth shall not exceed the smallest by more than 3/8 inch.
- Winder treads shall have a minimum tread depth of 10-inches measured at 12-inches from the narrowest side which shall be a minimum of 6-inches in depth.
- Enclosed accessible space under stairs shall be protected by ½ inch gypsum board installed on the enclosed side of walls and soffits.
- All stairs shall be provided with illumination. (Section R311.5.7)

Handrails:

- Handrails are required on one side of every stairway with four or more risers. (Section 311.6)
- Handrails shall be installed at a height of not less 34 inches nor more than 38 inches. (Section R311.5.6.1)
- Handrail grip size shall be not less than 1 ¼ inches nor more than 2 inches. If the handrail is not circular it shall have a perimeter of not less than 4 inches nor more than 61/4 inches with a maximum cross section of 2 1/4 inches. (Section R311.5.6.3)
- Handrails shall not project more than 4.5 inches on either side. (Section R311.5)
- When a handrail is installed on <u>one side</u>, the stairway clear width shall not be less than 31 inches at and below the handrail. (Section R311.5)
- When handrails are installed on <u>both sides</u>, the stairway clear width shall not be less than 27 inches at and below the handrails. (Section R311.5)\
- Handrail height shall be not less than 34inches, and not more than 38-inches, from top of rail to the nosing of the stair treads per (R11.5.6.1).
- Openings for required guards on the sides of stair treads shall not allow a sphere 4 3/8 inches to pass through. (R312.2)

Guardrails:

- Guardrails are required at every stairway, floor, landing, or decks greater than 30 inches above the grade or floor. (Section R312.1)
- Guardrails on elevated floors, balconies, decks, and porches shall have intermediate rails, which do not allow passage of a 4-inch sphere. (Section R312.2)
- The minimum height of guardrails on elevated floors shall be 36 inches and not less than 34 inches on sides of stairs. (Section R312.1)

Doors:

- One exit door required for each dwelling unit per section (R311.4.1.) Exit door shall be side-hinged, not less than 3 feet wide and 6-feet 8-inches high. (R311.4.2)

Landings:

- Landings at the required exit door shall be not more than 1.5 inches lower than the top of the threshold. (Section R311.4.3)
- Landings at exterior doorways shall not be more than 7 3/4 inches below the top of the threshold provided the door, other than storm doors and screens does not swing over the landing. (Section R311.4.3)
- Stairways of two or fewer risers located on the exterior side of a door, other than the required exit door, a landing is not required for the exterior side of the door. (Section R311.4.3)

Hallways: Hallways minimum clear width is 36 inches.

Garages:

- Openings from garage into sleeping rooms shall not be permitted. (Section R309.1)
- Other openings between the garage and the residence shall be equipped with solid wood doors not less 1 3/8 inches in thickness, solid or honeycomb core steel doors not less than 1 3/8 inches thick or a 20-minute fire door. (Section R309.1)

- The garage shall be separated from the dwelling by ½-inch gypsum applied to the garage side, unless a habitable space is above the garage, then 5/8 inch Type X gypsum shall be installed on the ceiling and the structure supporting the separation shall also be protected with not less than ½-inch gypsum. (Section R309.2)
- Ducts in the garage and ducts penetrating the walls or ceilings separating the dwelling from the garage shall be constructed of a minimum No. 26 gage (0.48 mm) sheet steel or other approved material and shall have no openings into the garage. (309.1.1)

Miscellaneous:

- Appliances located within garages shall be protected from impact. (Section M1307.3.1)
- Appliances having ignition sources shall be elevated 18 inches above garage floors. (Section M1307.3 & G2408.2)
- Water heaters and fixed appliances shall be anchored or strapped. (See UPC 510.5 / M1307.2.)
- Water closets shall have a minimum of 30 inches of net clearance, sidewall to sidewall, and at least 24 inches of clearance in front. (UPC 408.6)
- A separate permit is required for wood stoves.
- Separate permit required for lawn sprinklers.

Engineering is required for all buildings to be framed from light gage steel framing members within Seismic Design Category D_1.